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A new Lejunea from Bermuda and the West Indies*

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(WITH PLATE 24)

The species described below is not uncommon in the West Indies and is perhaps to be expected in Florida and Mexico. It seems to be most abundant at low altitudes, without being strictly coastal in its distribution. The material at first examined, which was scanty and incomplete, was confused with *L. glaucescens* Gottsche, and some of the Bermuda specimens have been listed under this name by the writer.† More abundant material has since been available and has shown conclusively that the species is amply distinct.

Lejeunea minutiloba sp. nov.

Pale or dull green, often somewhat brownish with age, scattered or growing in depressed mats: stems about 0.1 mm. in diameter, copiously and irregularly branched, the branches obliquely to widely spreading, often with slightly smaller leaves than the stem but not microphyllous: leaves contiguous to loosely imbricated, the lobe widely spreading, slightly falcate, plane or slightly concave, broadly ovate, when well developed about 0.5 mm. long and 0.45 mm. wide, dorsal margin usually arching partially or wholly across the axis, then strongly outwardly curved to the broad and rounded apex, ventral margin straight or slightly outwardly curved, margin entire or vaguely and minutely crenulate from projecting cells; lobule in the form of a minute triangular basal fold, consisting of only a few cells, the apex represented by a single projecting cell tipped with a hyaline papilla; cells of lobe averaging about 13 μ in diameter at the margin and 25 × 20 μ in the median and basal portions, thin-walled but with minute trigones and occasional intermediate thickenings, cuticle smooth: underleaves distant, orbicular, about 0.2 long, bifid about one half with erect, triangular, acute, obtuse or rounded divisions, rounded at the base, margin as in the leaves: inflorescence autoicous: ♀ inflorescence sometimes borne on a leading branch, sometimes on a more or less abbreviated branch, innovating on one side, the innovation sometimes sterile, sometimes with a second ♀ inflorescence; bracts obliquely spreading, varying greatly in size, distinctly complicate, lobe oblong to obovate, when well developed about 0.45 mm. long and 0.3 mm. wide but often considerably smaller, margin as in the leaves, lobule ligulate, rounded at the apex, about 0.16 mm. long and 0.06 mm. wide; bracteole mostly obovate, about 0.4 mm. long and 0.25 mm. wide, bifid one third or a little more with erect, acute, obtuse, or rounded divisions, margin as in the leaves; perianth obovoid, when well developed about 0.5 mm. long and 0.35 mm. wide, terete in the lower half, distinctly five-keeled above, narrowed toward the base, truncate or slightly retuse at the apex and with a short but distinct beak: ♂ inflorescence usually occupying a short branch and not proliferating, bracts closely imbricated, in two or three pairs, strongly inflated, shortly bifid with a crenulate, strongly arched keel and rounded divisions; bracteole usually single at base of inflorescence, smaller than the underleaves, bifid: capsule about 0.2 mm. in diameter.

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* Contribution from the Osborn Botanical Laboratory.

† Bull. Torrey Club **33**: 131. 1906.

BERMUDA: on rocks and stones, Church Cave and vicinity, July, 1900, *M. A. Howe 7;* February, 1908, *S. Brown 504, 505;* September, 1912, *E. G. Britton 1088;* on rocks and stones, Walsingham, June, 1900, *M. A. Howe 3;* September, 1905, *E. G. Britton 286;* gully, Tuckerstown, September, 1905, *E. G. Britton 323;* February, 1908, *S. Brown 516;* on bark and roots, Abbott's Cliff, September, 1912 and 1913, *E. G. Britton 888, 931, 932* (in part), *933, 1867;* on bark, without definite locality, 1908, *S. Brown 559a.*

CUBA: in a ravine and on roots of royal palm, San Luis, Oriente, April, 1909, *N. L. Britton 2327, 2329;* on shaded limestone, Tropical Park, Puentes Grandes, Havana, August, 1911, *Brother Leon 2739.*

PORTO RICO: on trunk of a tree, near Rio Piedras, January, 1899, *Mr. & Mrs. A. A. Heller 147;* near Bayamon, July, 1901, *Underwood & Griggs 892;* vicinity of Coamo Springs, March, 1906, *M. A. Howe 1371;* on bark and on earth, Lares to San Sebastian, April, 1913, *Britton & Marble 2799, 2800;* at base of tree, vicinity of Ponce, March, 1913, *Britton & Shafer 1747;* on bark, Candalaria, near Bayamon, February, 1914, *E. G. Britton 1521.*

ST. THOMAS: on banks and stones, St. Peter, February, 1913, *Britton & Marble 1251, 1254, 1255;* on stones, Crown, February, 1913, *Britton & Marble 1365.*

No. 1365 from St. Thomas may be designated the type; a slight admixture of *L. pililoba* Spruce is present.

In the genus *Lejeunea* the lobule when typically developed consists of an inflated sac, ovate in outline, more or less involute along the free margin, and tipped by a single projecting cell with a hyaline papilla at its proximal base. The same general type of lobule is found in several other genera of the Lejeuneae, such as *Rectolejeunea, Ceratolejeunea,* and *Crossotolejeunea.* Unfortunately, in certain species of *Lejeunea,* the lobule often fails to show its typical structure and appears reduced in size or otherwise variously modified. In some cases a prolonged search may be necessary before inflated lobules can be demonstrated at all, and it is not unusual for poorly developed lobules to be associated with plants bearing perianths. In the species here proposed as new no inflated lobules whatever have been seen, although many plants, both with and without perianths, have been examined. The lobule in all cases observed has been in the form of a minute basal fold, consisting of only a few cells. It seems safe to assume, therefore, that lobules of this reduced type represent a constant feature of the species.

With respect to size, the leaves, perichaetial bracts and perianths of *L. minutiloba* exhibit a considerable range of variation, and on slender stems and branches the leaves may be scarcely half as large as on robust stems. The small bracts and perianths are associated especially with short female branches, the size varying approximately with the length of the branch. The smallest bracts and perianths, therefore, are usually to be found on branches which bear a single vegetative leaf in addition to the bracts. The underleaves and bracteoles are much less subject to variation in size than the leaves and bracts; they vary markedly, however, in the character of their apices. These are sometimes acute or even apiculate, sometimes obtuse, and sometimes broadly rounded.

Among related species it will be sufficient to mention *L. floridana* Evans and *L. glaucescens* Gottsche. The first is still known from Florida only, but the second is widely distributed in tropical and subtropical America. Both species are somewhat larger than L. *minutifolia*, the leaves being often 0.7 mm. in length, but they agree with it in inflorescence and in having small orbicular underleaves. In both species, however, the lobules are frequently inflated and conform closely to the usual *Lejeunea* type. *L. floridana* is further distinguished by its much larger perichaetial bracts (often 0.8 mm. in length), by its more shortly bifid underleaves and bracteole, and by the crenulate keels of its perianth, projecting upward as horns. In *L. glaucescens*, the bracts approximate those of *L. minutifolia* in size but the lobules are usually distinctly pointed.

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Explanation of plate 24

LEJEUNEA MINUTILOBA Evans

The figures were drawn by the writer from the type specimen and prepared for publication by Mr. H. D. Rhynedance.

FIG. 1. Part of plant with two perianths, ventral view (male inflorescence not shown), × 45.

FIG. 2. Lobule of a stem leaf, × 250.

FIG. 3. Cells from the apex of a lobe, × 335.

FIG. 4. Cells from the middle of a lobe, × 335.

FIG. 5. Underleaf, × 110.

FIGS. 6–8. Bracts and bracteole from a single involucre, × 55.

FIGS. 9–11. Bracts and bracteole from a second involucre, × 55.

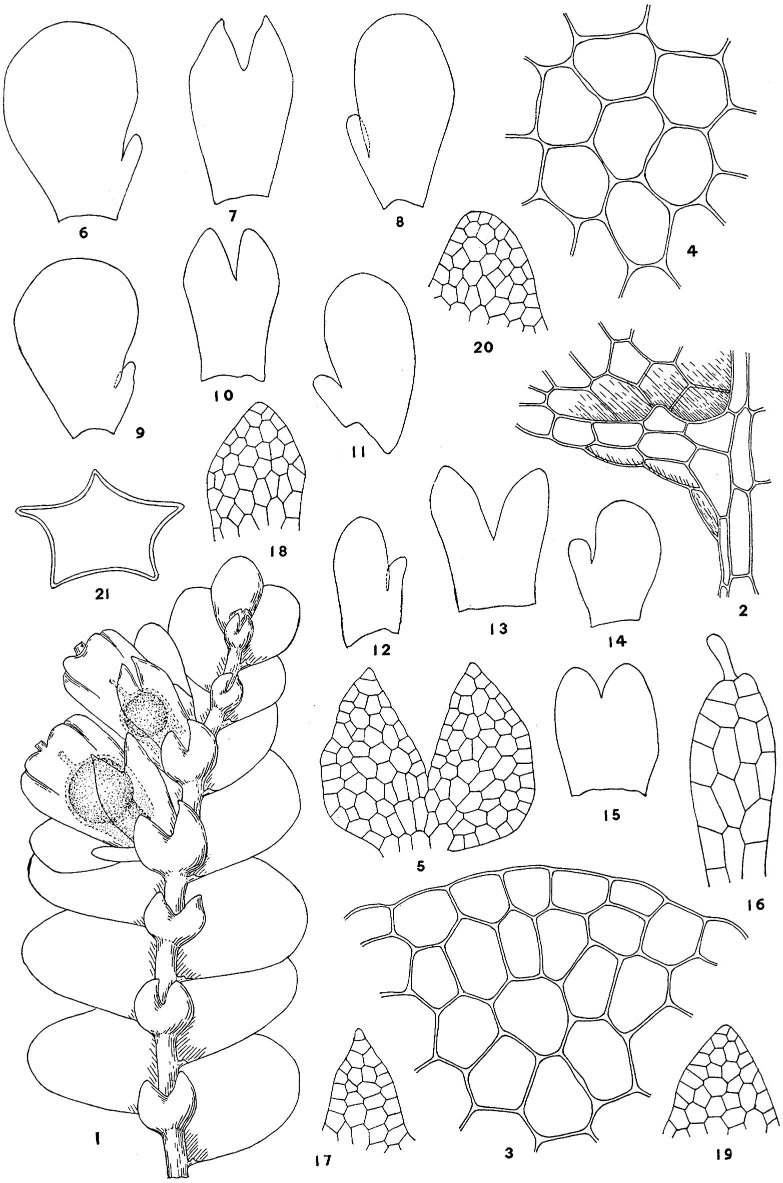
FIGS. 12–14. Bracts and bracteole from a third involucre, × 55.

FIG. 15. Bracteole from a fourth involucre, × 55.

FIG. 16. Lobule of a perichaetial bract, × 250.

FIGS. 17–20. Apices of various bracteole-divisions, × 110.

FIG. 21. Transverse section of a perianth in upper fourth, × 55.



LEJEUNEA MINUTILOBA Evans